

Newton's 1st Law & Resulting Motion Lab 1: Uncommon Motion

TUG OF WAR - be sure to check the boxes for “Sum of Forces” and “Values” and uncheck “Sound”

For each simulation show, draw each team's forces, including the values, as well as the net force (aka Sum of Forces). Then answer the questions relating to each situation using complete sentences.

1.



- Describe the resulting motion (1) of the simulation and explain why (1) this must be true.
- Do results ever change if you always have the same people pulling on either side (1)? Pause simulation each time you add another puller to each team then press “Go!” once both sides are even.

2.



- a. Explain why the blue team wins the tug of war.

3.



- a. Allow the simulation to run for a time, then, while the simulation is still running (do not allow red to win), add the blue puller to make it even while the cart is in motion. Describe the resulting motion (1) and explain who wins and why (1).

Show the new forces and net force (after you add the 3rd blue puller)



4. With the same start as question 3, what must occur in order for the blue team to win (1) ? Why must this be true (1)?

MOTION - be sure to check the all boxes in the legend.

Place a crate on the skateboard and apply a constant force to the object. Force applied: _____

5. Describe what happens to the speed while the force is being applied?

6. Stop applying the original force, describe what happens to the speed once the force is no longer applied?

Place the fridge on the skateboard and apply the same constant force as before.

7. Describe the difference of the speed of the fridge compared to the crate?

8. Stop applying the original force, describe what happens to the speed of the fridge once the force is no longer applied?

Newton's 1st Law & Resulting Motion Lab 1: Laws of the Force

From your observations come up with laws about motion. A law is a statement that holds true in all situations. If one part of your experience / observation in the lab refutes your law it doesn't work. You should try to come up with two laws.

1.

2.

Newton's 1st Law & Resulting Motion Lab 1: Learning Notes